“Brain Games” An Authentic Learning Intervention for 21st Century Skills Development

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The paradigm of the 21st Century Learning Skills has gained considerable attention in the educational lexicon over the past decade. Both educational and industrial stakeholders alike have called for schools to consider the development of key skills such as collaboration, critical thinking, digital literacy and communication as a priority for their students. According to the supporters of the 21st Century Learning Skills, schools must answer this call in order to prepare their students for the nature of learning and employment beyond second level education.

Certainly, this viewpoint is not without challenge, an arguably valid apprehension being that such skills should not be taught in detachment or indeed to the detriment of curricular content. The Partnership for 21st Century Learning have in part addressed this by including a core subject element in their framework.

Both authentic learning and project based learning have been suggested as theories that could provide more tangible models for 21st century teaching. Authentic learning activities involve real-world problems, open ended inquiry directed by learners and social learning. Similarly, project-based learning involves real-world problems, greater student control over projects and collaborative learning, but furthermore emphasises the facilitating role teachers play in the learning activity (Barron & Darling-Hammond, 2008;Thomas, 2000). Another teaching pedagogy to consider as a model is Mantle of the Expert (Heathcote and Bolton, 1994), in which teachers create realistic scenarios or challenges for students, allowing students to assume roles of experts in the imagined context so that they may develop generalisable skills while acquiring knowledge.

This work, through a learning intervention called the "Brain Game", applies features of authentic learning, project-based learning and Mantle of the Expert to a structured learning activity. The "Brain Game" is a role play simulation in which students work on planning an authentic task. Students assume roles of project managers within a team while a teacher assumes the role of a "Brain". The "Brain" represents all relevant stakeholders in a project and the team engage with them through email. The "Brain" is also briefed to respond to emails from the team of students in their stakeholder roles as professionally and true to real life as possible. (For example if the simulation involved planning an event the Brain will respond as if it were invitees; the facility provider; the printer of invitations etc.) An element of pressure is added to the intervention by compressing time with each project month equivalent to an half an hour in the simulation. The team work to real deadlines that require a number of digital artefact deliverables to be prepared..

This research is an exploratory case study involving 144 students who each took part in 2 one day workshops to explore the potential for developing 21st Century Skills through participating in the "Brain Game". A mixed methods approach (QUAL + quan) was utilised, with data collected immediately after each workshop and from a subset of the participants after they had the opportunity to put their skills into practice in a real world project.

The "Brain Game" in this study's implementation simulated the process of managing a community service project run by students aged 13-14 prior to those students actually implementing such a project in actuality.

The findings of the study suggest that the students, as identified by themselves, perceived that they developed the skills of collaboration, organising and communicating, during the "Brain Game". There is also evidence that students applied these skills to later work on real community projects. The findings also suggest that the intervention gave the students greater confidence in undertaking the real community projects.